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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 09/408,808 | 09/29/1999 | DAVID A. WRIGHT | 22-0074 | 4482 |

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TRW INC
PATENT COUNSEL
SPACE AND ELECTRONICS GROUP
ONE SPACE PARK E2 6072
REDONDO BEACH, CA 90278

| EXAMINER | |
|---|---|
| LEI, TSULEUN R | |
| ART UNIT | PAPER NUMBER |
| 2686 | 6 |

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Please find below and/or attached an Office communication concerning this application or proceeding.

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 09/408,808 | WRIGHT ET AL. | |
| | Examiner | Art Unit | |
| | TSULEUN R. LEI | 2681 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *amendment filed on 2/11/03* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *1-32* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *12-18,21 and 28* is/are allowed.

6)☒ Claim(s) *1-5,7-11,19,20,22-27 and 29-32* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1-5, 7-11, 19, 20, 22-27 and 29-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takahashi et al. (U.S. Patent 6,240,075) in view of Breuckheimer et al. (U.S. Patent 6,496,508).

Regarding Claim 1, Takahashi teaches, in a processing satellite communications system including at least one processing satellite having a receiver and a transmitter for respectively receiving and transmitting a data cell, a method for virtual path switching of said data cell; the method comprising: receiving a data cell at one of a plurality of input ports of a processing satellite (Col.2, Lines 18-35). Takahashi does not teach examining an assigned VPI in the data cell. Breuckheimer, however, teaches examining an assigned virtual path identifier (VPI) in said data cell to determine a destination output port associated with said assigned VPI; and transferring said data cell to said destination output port based on said assigned VPI (Breuckheimer, Col.4, Lines 23-37, pre-provisioning connection paths). Since both Takahashi

and Breuckheimer are teaching packet data transmission on virtual circuits, it would have been obvious for one of ordinary skill in the art at the time the invention was made to combine the teaching of Breuckheimer into that of Takahashi to provide more flexibility in satellite on-board switching circuits.

Regarding Claim 2, Takahashi as modified by Breuckheimer teaches the method for virtual path switching of claim 1 comprising associating said destination output port with a crosslink to another processing satellite (It is inherent that a processing satellite can transmit data to another processing satellite).

Regarding Claim 3, Takahashi as modified by Breuckheimer teaches the method for virtual path switching of claim 1 further comprising: establishing a set of VPIs wherein each VPI is uniquely associated with a single output port on said processing satellite; establishing a set of virtual channel identifiers (VCIs); assigning said assigned VPI from said set of VPIs and a VCI from said set of VCIs to said data cell; and transmitting said data cell to said processing satellite (Breuckheimer, Col.4, Lines 23-45).

Regarding Claim 4, Takahashi as modified by Breuckheimer teaches the method for virtual path switching of claim 1 further comprising: establishing at least one control subfield indicating a distinct treatment for data cells; establishing at least one routing subfield corresponding to one of said output ports; and dividing said assigned VPI into a control subfield and a routing subfield (Takahashi, the Figure shown between Columns 5 and 6).

Regarding Claim 5, Takahashi as modified by Breuckheimer teaches the method for virtual path switching of claim 4 wherein said examining step comprises examining said routing subfield to determine said destination output port (Breuckheimer, Col.4, Lines 23-45).

Regarding Claim 7, Takahashi as modified by Breuckheimer teaches the method for virtual path switching of claim 5 further comprising examining said control subfield to determine a level of output queuing priority for said data cell (Takahashi, the Figure shown between Columns 5 and 6).

Regarding Claim 8, Takahashi as modified by Breuckheimer teaches the method for virtual path switching of claim 1 further comprising: providing at least one multicast module on said processing satellite wherein said multicast module is associated with one multicast output port; and providing at least one multicast routing table having memory locations storing addressing information (Takahashi, Col.3, Line 59 to Col.4, Line 3).

Regarding Claim 9, Takahashi as modified by Breuckheimer teaches the method for virtual path switching of claim 8 further comprising: establishing a set of VPIs wherein each VPI is uniquely associated with a single output port on said processing satellite, and wherein at least one of said VPIs is a multicast VPI uniquely associated with said multicast output port; and establishing a set of VCIs (Breuckheimer, Col.4, Lines 23-45; Takahashi, Col.2, Lines 47-65).

Regarding Claim 10, Takahashi as modified by Breuckheimer teaches the method for virtual path switching of claim 9 further comprising assigning said multicast VPI to said data cell, and assigning a VCI from said set of VCIs to said data cell (Takahashi, Col.2, Lines 47-65).

Regarding Claim 11, Takahashi as modified by Breuckheimer teaches the method for virtual path switching of claim 10 wherein said transferring step comprises transferring said data cell to said multicast output port uniquely associated with said assigned multicast VPI (Takahashi, Col.2, Lines 47-65; Breuckheimer, Col.4, Lines 23-45).

Regarding Claim 19, see Claim 1 for the teaching of Takahashi and Breuckheimer.

Regarding Claim 20, see Claim 3 for the teaching of Takahashi and Breuckheimer.

Regarding Claim 22, Takahashi as modified by Breuckheimer teaches the method for virtual path switching of claim 19 further comprising storing routing tags in an input routing table, and wherein said step of examining further comprises determining said selected routing tag (Takahashi, Col.3, Line 59 to Col.4, Line 3).

Regarding Claim 23, see Claim 1 for the teaching of Takahashi and Breuckheimer.

Regarding Claim 24, Takahashi as modified by Breuckheimer teaches the apparatus for path switching of claim 23 wherein said data cell is an ATM cell (Takahashi, Col.2, Lines 31-45).

Regarding Claim 25, Takahashi as modified by Breuckheimer teaches the apparatus for path switching of claim 23 further comprising an examining circuit for examining a virtual path identifier (VPI) in said data cell (Takahashi, Col.2, Lines 31-45 and Lines 61-65).

Regarding Claim 26, Takahashi as modified by Breuckheimer teaches the apparatus for path switching of claim 23 wherein said address bits include at least a portion of a virtual path identifier (VPI) (Takahashi, Col.2, Lines 61-65).

Regarding Claim 27, Takahashi as modified by Breuckheimer teaches the apparatus for path switching of claim 26 wherein said address bits further include at least a portion of a virtual channel identifier (VCI) (Takahashi, Col.2, Lines 61-65).

Regarding Claim 29, Takahashi as modified by Breuckheimer teaches the apparatus for path switching of claim 23 wherein said circuitry is further responsive to a control subfield and a routing subfield, said control subfield indicating special treatment of said data cell (Takahashi, Col.4, Lines 34-55).

Regarding Claim 30, Takahashi as modified by Breuckheimer teaches the apparatus for path switching of claim 23 further comprising at least one multicast module connected between said input module and said output module (Takahashi, Col.3, Lines 59-66).

Regarding Claim 31, Takahashi as modified by Breuckheimer teaches the apparatus for path switching of claim 30 further comprising at least one multicast routing table connected to said multicast module, said multicast routing table containing multicast group information (Takahashi, Col.3, Line 59 to Col.4, Line 3).

Regarding Claim 32, Takahashi as modified by Breuckheimer teaches the apparatus for path switching of claim 23 wherein at least one of said output ports is associated with a crosslink to another processing satellite (Takahashi, Col.3, Line 50 to Col.4, Line 21).

3. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Takahashi and Breuckheimer, in view of Wright et al. (U.S. Patent 6,366,776).

Regarding Claim 6, Takahashi as modified by Breuckheimer teaches the method for virtual path switching of claim 5, but is silent on error control of data cell. Wright, however, teaches further comprising examining said control subfield to determine a level of error control for said data cell (Wright, Col.1, Line 60 to Col.2, Line 8). Therefore, it would have been obvious for one of ordinary skill in the art at the time the invention was made to combine the

teaching of Wright into the teaching of Takahashi and Breuckheimer for the purpose of adjusting the power level based on the error information as taught by Wright.

***Allowable Subject Matter***

4. Claims 12-18, 21 and 28 are allowed.

The reasons for the indication of allowable subject matter in Claims 12-18, 21 and 28 were given in the previous Office Action, but these claims were objected because they were dependent upon rejected base claims. These claims have been amended and rewritten in independent form including all of the limitations of the base claim and any intervening claims, and they are in condition for allowance.

***Conclusion***

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to TSULEUN R. LEI whose telephone number is 703-305-4828. The examiner can normally be reached on 8:30 to 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dwayne D Bost can be reached on 703-305-4778. The fax phone numbers for the

organization where this application or proceeding is assigned are 703-308-5403 for regular communications and 703-308-5403 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-3900.

TRL

TRL
June 27, 2003

ERIKA CARY
PATENT EXAMINER